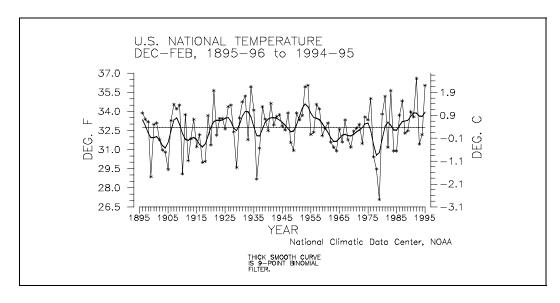
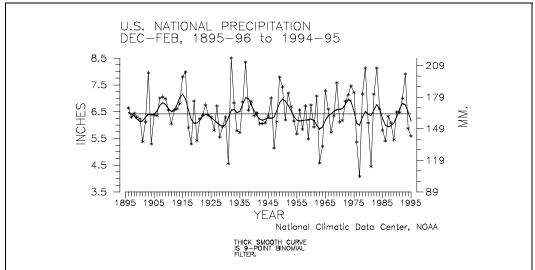
CLIMATE VARIATIONS BULLETIN







This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Analysis Center, and preliminary tornado statistics obtained from the NWS National Severe Storms Forecast Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), the hurricane datasets (TD-9636 and TD-9697), the tornado dataset (STORM DATA), and the monthly station dataset (LCD supplemental files). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

The narrative, tables, and graphs in the CVB are also available via automated facsimile. The previous month's summary can be obtained after the tenth of the month by dialing 704-271-4570 and selecting the appropriate menu codes. A touch-tone fax machine is required.

If you have access to the Internet, copies of the CVB are available via both the NCDC's World Wide Web (WWW) server and the NCDC's anonymous FTP server.

NCDC's WWW server

URL for the CVB: http://www.ncdc.noaa.gov/publications/cvb/cvb.html

NCDC's anonymous FTP server

Machine: ftp.ncdc.noaa.gov Directory: /pub/data/cvb

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 704-271-4994 or fax a letter to 704-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 704-271-4800 or sending a fax to 704-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES FEBRUARY CLIMATE IN HISTORICAL PERSPECTIVE

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Preliminary data for February 1995 indicate that temperature averaged across the contiguous United States was above the long-term mean (see Figure 1). February 1995, with an averaged temperature of 37.7° (F), ranked as the 15th warmest February since national records began in 1895. The 1995 value is based on preliminary data, which has been shown to be within 0.26°F (0.14°C) of the final data over a 46-month period. This confidence interval is indicated in the figure by '+'. The darker smooth curve is a nine-point binomial filter that averages out the year-to-year fluctuations and shows the longer-term variations. Nearly one-third (30.9%) of the country averaged much warmer than normal while none of the country averaged much colder than normal for February 1995.

Areally-averaged precipitation for the nation was considerably below the long-term mean, ranking February 1995 as the 7th driest February on record. The preliminary value for precipitation is estimated to be accurate to within 0.14 inches (3.56 millimeters) and the confidence interval is plotted in Figure 2 as a '+'. Nearly a quarter of the country (23.9%) experienced much drier than normal conditions while none of the country was much wetter than normal.

Historical precipitation is shown in a different way in Figure 3. The February precipitation for each climate division in the contiguous U.S. was first standardized using the gamma distribution over the 1931-90 period. These gamma-standardized values were then weighted by area and averaged to determine a national standardized precipitation value. These national weighted values were then normalized over their period of record. Negative values are drier and positive values are wetter than the mean. This index gives a more accurate indication of how precipitation across the country compares to the local normal (60-year average) climate. The national standardized precipitation also ranked February 1995 as the 7th driest such month on record.

In order to show more of a historical perspective, the precipitation and temperature rankings for the periods February 1995, January-February 1995, September 1994-February 1995, and March 1994-February 1995 for the nine climatically homogeneous regions, as well as the national rankings, are listed in Table 1.

The regional rankings for temperature for the month of February indicate that warmer than normal conditions were noted for the entire country except for the Southeast and Northeast (Figure 14) regions where near normal and slightly below normal temperatures, respectively, occurred. February 1995 was the second warmest such month since 1895 for the Southwest region (Figure 13), the fourth warmest for the West region, and the fifth warmest February on record for the Northwest region.

Every region of the country except the Southwest region (47th wettest, Figure 12) and the Southeast region (47th driest) was within the dry fifth of the historical distribution for the month of February. Continuing a nine year trend of near to much drier than normal conditions for February, it was the ninth driest such month on record for the East-North Central region (Figure 11). It was the 14th driest such month since 1895 for both the South and West-North Central regions. It was the 15th driest February on record for the Central region, the 16th driest for both the Northeast and Northwest regions and the 17th driest February on record for the West region.

National averaged temperature for the two month period January-February 1995 is shown in Figure 4. Temperature for the two-month period was much above the long-term mean ranking as the 8th warmest such period since 1895.

In Figure 5, national averaged precipitation for January-February 1995 is shown graphically. The two month period was the 17th driest such period since

records began. When the local normal climate is taken into account, January-February 1995 ranked as the 16th driest such period since 1895 (Figure 6).

Figure 7A shows, in illustrative map form, the February 1995 temperature rankings for the 48 contiguous states. Nine states were within the top ten warmest category of the historical distribution for the month of February including the warmest February since 1895 for both Arizona and Nevada. It was the second warmest February on record for Oregon, Utah, and New Mexico, fifth warmest for Colorado, sixth warmest for Wyoming and Idaho, and seventh warmest for California. Eleven other states were within the warm third of the historical distribution. No state was within the top ten cool category of the historical distribution while only seven were within the cool third of the historical distribution.

February 1995 state ranks for precipitation are shown in Figure 7B. It was the fourth driest February on record for Oklahoma, fifth driest February since 1895 for lowa, seventh driest February on record for Wisconsin and the eighth driest February since 1895 for Arkansas. Twenty-nine other states were within the dry third of the historical distribution. No state was within the top ten wet category while only two (AZ & SC) were within the wet third of the distribution. It should be noted that the February state precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.

Temperature and precipitation ranks for the twomonth period, January-February 1995 are shown in map form in Figures 8A and 8B. Twelve states experienced their tenth warmest or warmer such two month period (Figure 8A). Included in this statistic was the second warmest such period for California, Oregon, and Nevada, and the third warmest January-February period for Idaho, Utah, and Arizona. Twenty-two other states were within the warm third of the historical distribution. Only one state (Florida, 34th coolest) was within the cool third of the historical distribution for the two-month period. It was the driest year-to-date for Delaware, the sixth driest such period for Montana. seventh driest for Wisconsin, and the tenth driest January-February period for Colorado, Iowa, and Maryland (Figure 8B). Twenty-three other states were within the dry third of the historical distribution for January-February 1995. No state was within the top ten wet for the year-to-date while only five were within the wet third of the historical distribution.

There was a slight increase in the national picture of severe to extreme long-term drought and a slight decrease in the percentage of the country experiencing severe to extreme long-term wet spell during February 1995. Nationally, long-term drought conditions (as defined by the Palmer Drought Index) for February increased to 7.2% of the country while the percent coverage of severe to extreme wet area decreased to 7.1% (Figure 9). Table 2 lists the precipitation ranks and statistics for selected river basins for the 1994-1995 Hydrologic Year thus far. The core wet areas included portions of the northern Great Plains, the Southeast, and portions of the Southwest. The core dry areas included the interior Northwest, the northern and central Rockies, and portions of the mid-Atlantic region.

Table 3 shows extremes, 1961-90 normals, and the February 1995 values for both precipitation and temperature for the nine regions and the contiguous U.S.

Precipitation averaged across the Primary Hard Red Winter Wheat Belt ranked above normal for the October-February growing season to date (Figure 10).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 13 tornadoes across the contiguous United States in February 1995. The 1953-1994 average tornado count for February is 21. Only two tornadoes were reported in February 1964 while 83 were documented in February 1971. It should be noted that the preliminary tornado count is generally higher than the final count.

UNITED STATES WINTER CLIMATE IN HISTORICAL PERSPECTIVE

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Preliminary winter (December-February) data for 1994-95 indicate that temperature averaged across the contiguous United States was much above the long-term mean. For the nation, December 1994-February 1995 was the third warmest winter on record (Table 4) and marked a departure from the below-normal conditions of the previous two winters (see Figure 15). (The preliminary ranks indicate winter 1994-95 tied with winter 1953-54, with only the winter of 1991-92 being warmer.) A third (34.3%) of the country averaged much warmer than normal for winter 1994-95 while none of the country (0.0%) had winter average temperatures in the much colder than normal category.

Areally-averaged December through February precipitation for the nation was well below the long-term mean, ranking 1994-95 as the 16th driest winter on record (see Table 4 and Figure 16). The national standardized precipitation index (Figure 17) ranked 1994-95 as the 15th driest winter on record (page 1 explains how this index is computed). The standardized precipitation index (Figure 17) provides a climatological perspective of the season's anomalies, taking local normal climate into account so that regions with large precipitation amounts do not dominate the index value. Areally-averaged precipitation (Figure 16) provides a hydrological perspective. One sixth (16.6%) of the country experienced much drier than normal winter conditions while only 1.7% of the country was much wetter than normal for winter 1994-95.

The temperature and precipitation ranks for winter 1994-95 for the nine climatically homogenous regions in the United States are listed in Table 4. Average winter temperatures followed a simple pattern, with the Southeast region (Figure 18) ranking in the middle of the historical distribution while the rest of the regions ranked in the warm third of the distribution. The top contenders were the Southwest region at fourth warmest and West region at fifth warmest (Figure 19).

The regional precipitation pattern for winter 1994-95 was also straightforward, consisting of generally dry conditions in the northern regions and Central region, and moderate conditions in the southern regions (Table 4). The West North Central region had the second driest winter on record, with 1994-95 continuing the pattern of near to well below-normal winter precipitation that has characterized the region for most of the last 16 years (Figure 20). Even the region with the wettest rank (West region, Figure 21) still fell only in the middle third of the distribution (44th wettest winter).

On a statewide basis, fifteen states (the western states AZ, CA, CO, ID, NV, NM, OR, UT, WY, the northeastern states CT, NH, RI, VT, plus KS and OK in the Plains) ranked in the top ten warmest category for winter 1994-95 (see Figure 22A). No states ranked in the top ten coldest category. Seven states (CO, DE, MD, MT, NJ, WI, WY) ranked in the top ten driest category with only one (SC) in the top ten wettest category (see Figure 22B).

According to preliminary data from the National Weather Service's National Severe Storms Forecast Center, there were 58 tornadoes across the contiguous United States during winter 1994-95. This compares to the 1953-1994 average of 53. The extremes: 13 winter tornadoes in 1985, and 149 in 1983. It should be noted that the preliminary tornado count is generally higher than the final count and that the tornado observations have generally improved with time as better observing practices and instrumentation (especially weather radar and satellites) were utilized.

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1995. 1 = DRIEST/COLDEST, 101 = WETTEST/WARMEST FOR FEBRUARY 1995, 101 = WETTEST/WARMEST FOR JAN-FEB 1995, 100 = WETTEST/WARMEST FOR SEP 1994-FEB 1995, 100 = WETTEST/WARMEST FOR MAR 1994-FEB 1995.

REGION				SEP 1994- FEB 1995	
	PRECIPITA	TION:			
NORTHEAST		16	25	7	62
EAST NORTH		9	16	51	51
CENTRAL		15	39	24	46
SOUTHEAST		47	51	73	92
WEST NORTH		14	5	69	25
SOUTH		14	17	56	53
SOUTHWEST		55	58	74	50
NORTHWEST		16	24	19	9
WEST		17	63	50	39
NATIONAL		7	17	43	41
	TEMPERATU	RE:			
NORTHEAST		34	77	90	86
EAST NORTH		62	75	96	93
CENTRAL		52	54	86	76
SOUTHEAST		41	47	73	63
WEST NORTH		86	86	94	94
SOUTH		79	81	90	88
SOUTHWEST		100	99	91	99
NORTHWEST		97	98	83	99
WEST		98	100	72	98
NATIONAL		87	94	97	99

TABLE 2.

STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-FEB 1994-95, WHERE RANK OF 1 = DRIEST, 100 = WETTEST, BASED ON THE PERIOD 1895 TO 1995, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF FEBRUARY 1995. RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK		
MISSOURI BASIN PACIFIC NORTHWEST BASIN CALIFORNIA RIVER BASIN		.8% 38.3% .0%	
GREAT BASIN UPPER COLORADO BASIN LOWER COLORADO BASIN RIO GRANDE BASIN	80 36 86 78	.0% 68.4% .0% 18.3%	.0%
ARKANSAS-WHITE-RED BASIN TEXAS GULF COAST BASIN SOURIS-RED-RAINY BASIN UPPER MISSISSIPPI BASIN	74 86 96 61	.0% .0%	.0% .0% 73.9% 7.3%
LOWER MISSISSIPPI BASIN GREAT LAKES BASIN OHIO RIVER BASIN TENNESSEE RIVER BASIN	44 24 22 38		
NEW ENGLAND BASIN MID-ATLANTIC BASIN SOUTH ATLANTIC-GULF BASIN	12 6 79	8.5%	.0% 4.1% 22.8%

TABLE 3. EXTREMES, 1961-90 NORMALS, AND 1995 VALUES FOR FEBRUARY

	PRECIPITATION (INCHES)					
					NORMAL	
					PCPN	PCPN
NORTHEAST	.70	1987	5.43	1900	2.65	2.01
EAST NORTH CENTRAL	.31	1987	2.40	1922	.95	.54
CENTRAL	.67	1947	5.46	1909	2.64	1.71
SOUTHEAST	1.36	1898	7.16	1903	4.15	3.90
WEST NORTH CENTRAL						
SOUTH	.66	1916	5.63	1903	2.30	1.31
SOUTHWEST	.14	1972	2.07	1980	.80	.81
NORTHWEST	.69	1920	5.95	1904	2.86	1.75
WEST	.21	1964	6.49	1986	2.27	.88
NATIONAL	.96	1947	3.05	1903	1.98	1.37
	TEMPERATURE (DEGREES F)					
	TI	EMPERA	ATURE	(DEGRE	ES F)	
	TI COLI	EMPERA DEST			ES F) NORMAL	1995
	COLI	DEST	WARI VALUE	MEST YEAR		
	COLI	DEST	WARI	MEST YEAR	NORMAL	
REGION	COLI VALUE	DEST YEAR	WARI VALUE	MEST YEAR	NORMAL TEMP	TEMP
REGION 	COLI VALUE 11.6 1.1	DEST YEAR 1934 1936	WARI VALUE 31.6 29.6	MEST YEAR 1984 1954	NORMAL TEMP 23.3 17.6	TEMP 21.7 18.8
REGION NORTHEAST	COLI VALUE 11.6 1.1	DEST YEAR 1934 1936	WARI VALUE 31.6 29.6	MEST YEAR 1984 1954	NORMAL TEMP 	TEMP 21.7 18.8
REGION NORTHEAST EAST NORTH CENTRAL	COLI VALUE 11.6 1.1 20.6	YEAR 1934 1936 1978	WARN VALUE 31.6 29.6 41.8	YEAR 1984 1954 1930	NORMAL TEMP 23.3 17.6 32.2	TEMP 21.7 18.8 33.3
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL	COLI VALUE 11.6 1.1 20.6 37.8 2.7	YEAR 1934 1936 1978 1895 1936	WARN VALUE 31.6 29.6 41.8 56.4 34.5	YEAR 1984 1954 1930 1927 1954	NORMAL TEMP 23.3 17.6 32.2 47.1 22.2	TEMP 21.7 18.8 33.3 47.0 27.0
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL SOUTHEAST	COLI VALUE 11.6 1.1 20.6 37.8 2.7	YEAR 1934 1936 1978 1895 1936	WARN VALUE 31.6 29.6 41.8 56.4 34.5	YEAR 1984 1954 1930 1927 1954	NORMAL TEMP 23.3 17.6 32.2 47.1	TEMP 21.7 18.8 33.3 47.0 27.0
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL SOUTHEAST WEST NORTH CENTRAL	COLI VALUE 11.6 1.1 20.6 37.8 2.7 33.7	YEAR 1934 1936 1978 1895 1936 1905	WARN VALUE 31.6 29.6 41.8 56.4 34.5 53.5	YEAR 1984 1954 1930 1927 1954 1930	NORMAL TEMP 23.3 17.6 32.2 47.1 22.2 45.2	TEMP 21.7 18.8 33.3 47.0 27.0 49.1
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL SOUTHEAST WEST NORTH CENTRAL SOUTH	COLI VALUE 11.6 1.1 20.6 37.8 2.7 33.7 25.1 23.3	YEAR 1934 1936 1978 1895 1905 1903 1903	WARN VALUE 31.6 29.6 41.8 56.4 34.5 53.5 42.6 39.7	YEAR 1984 1954 1930 1927 1954 1930 1907 1963	NORMAL TEMP 23.3 17.6 32.2 47.1 22.2 45.2 35.9 33.5	TEMP 21.7 18.8 33.3 47.0 27.0 49.1 42.4 39.0
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL SOUTHEAST WEST NORTH CENTRAL SOUTH SOUTH	COLI VALUE 11.6 1.1 20.6 37.8 2.7 33.7 25.1 23.3	YEAR 1934 1936 1978 1895 1905 1903 1903	WARN VALUE 31.6 29.6 41.8 56.4 34.5 53.5 42.6 39.7	YEAR 1984 1954 1930 1927 1954 1930 1907 1963	NORMAL TEMP 23.3 17.6 32.2 47.1 22.2 45.2 35.9	TEMP 21.7 18.8 33.3 47.0 27.0 49.1 42.4 39.0
REGION NORTHEAST EAST NORTH CENTRAL CENTRAL SOUTHEAST WEST NORTH CENTRAL SOUTH SOUTHWEST NORTHWEST	COLI VALUE 11.6 1.1 20.6 37.8 2.7 33.7 25.1 23.3 32.6	1934 1936 1978 1895 1936 1905 1903 1903	WARN VALUE 31.6 29.6 41.8 56.4 34.5 53.5 42.6 39.7 48.8	YEAR 1984 1954 1930 1927 1954 1930 1907 1963 1963	NORMAL TEMP 23.3 17.6 32.2 47.1 22.2 45.2 35.9 33.5	TEMP 21.7 18.8 33.3 47.0 27.0 49.1 42.4 39.0 47.7

TABLE 4. TEMPERATURE AND PRECIPITATION RANKINGS FOR DEC 1994- FEB 1995, BASED ON THE PERIOD 1895-96 TO 1994-95. $1 = \text{DRIEST/COLDEST}, \ 100 = \text{WETTEST/HOTTEST}.$

REGION	PRECIPITATION	TEMPERATURE
NORTHEAST	19	88
EAST NORTH CENTRAL	12	91
CENTRAL	26	84
SOUTHEAST	42	66
WEST NORTH CENTRAL	2	89
SOUTH	41	88
SOUTHWEST	56	97
NORTHWEST	16	92
WEST	57	96
NATIONAL	16	98

U.S. NATIONAL TEMPERATURE FEBRUARY, 1895-1995

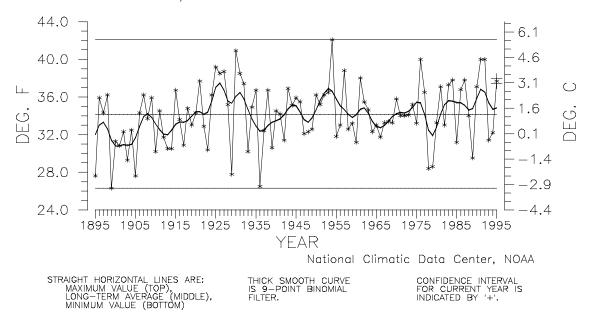


Figure 1

U.S. NATIONAL PRECIPITATION FEBRUARY, 1895-1995

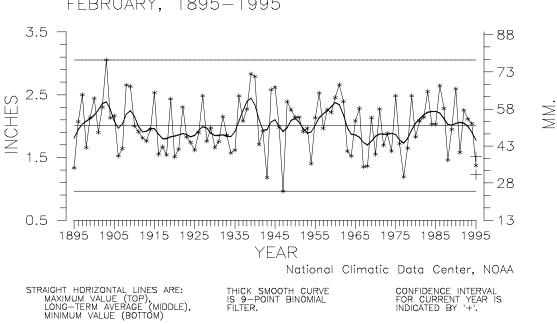
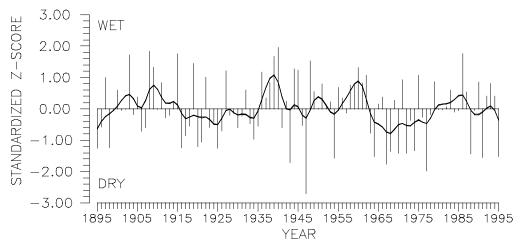


Figure 2

U.S. NATIONAL NORMALIZED PRECIPITATION INDEX FEBRUARY, 1895-1995



National Climatic Data Center, NOAA

Figure 3

U.S. NATIONAL TEMPERATURE JANUARY-FEBRUARY, 1895-1995

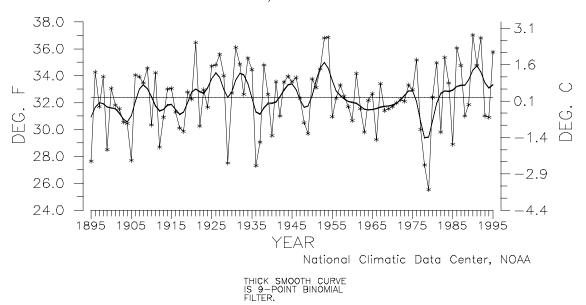


Figure 4

U.S. NATIONAL PRECIPITATION JANUARY-FEBRUARY, 1895-1995

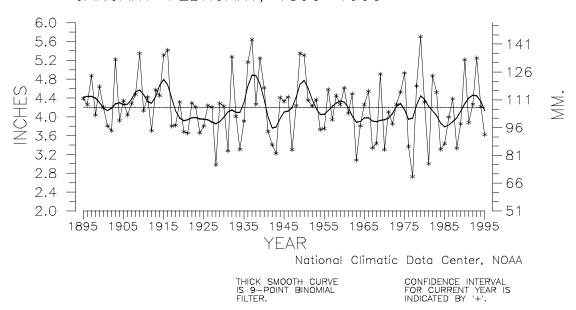
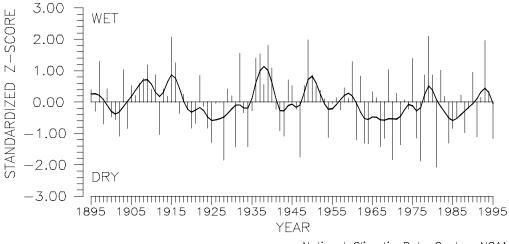


Figure 5

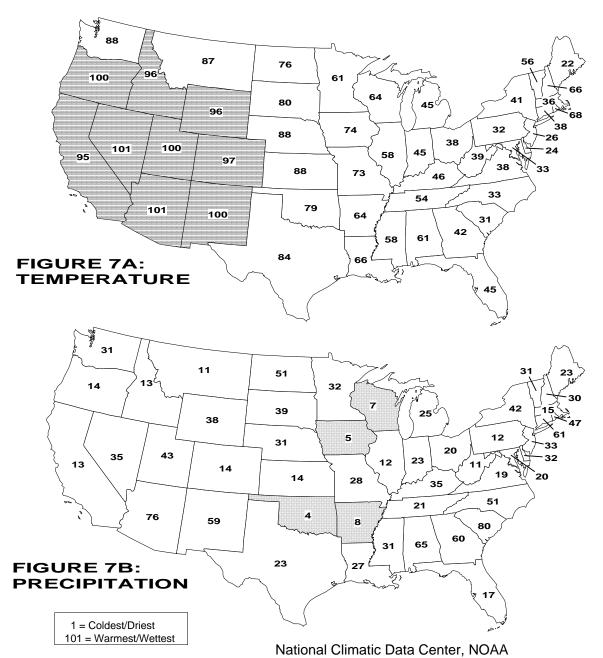
U.S. NATIONAL NORMALIZED PRECIPITATION INDEX JANUARY—FEBRUARY, 1895—1995



National Climatic Data Center, NOAA

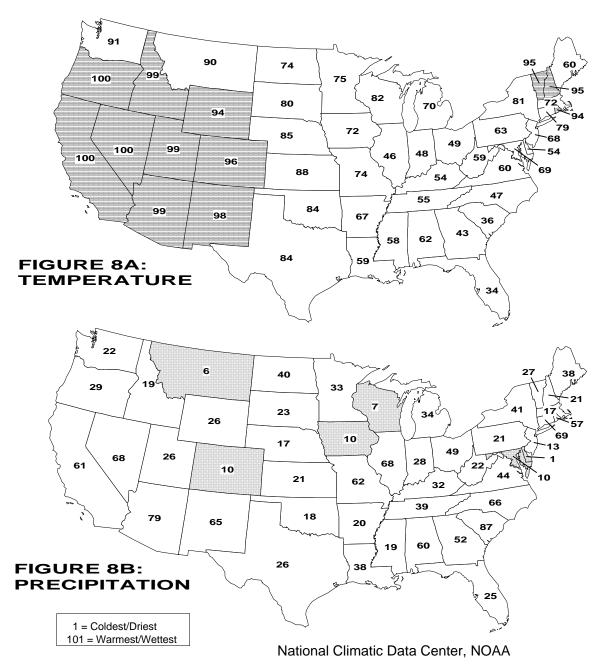
Figure 6

FEBRUARY 1995 STATEWIDE RANKS



Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

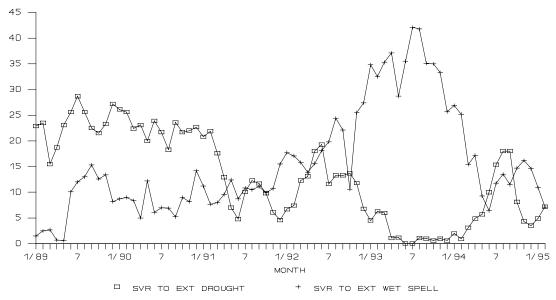
JAN-FEB 1995 STATEWIDE RANKS



Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 92-101) are shaded.

U.S. PERCENT AREA DRY AND WET

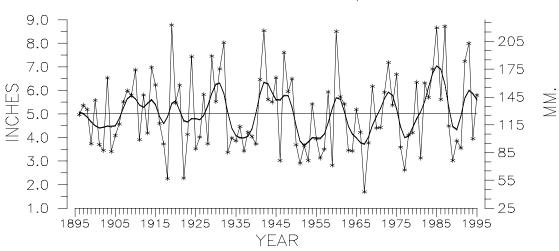
JANUARY 1989 THROUGH FEBRUARY 1993



National Climatic Data Center, NOAA

Figure 9





National Climatic Data Center, NOAA

Figure 10



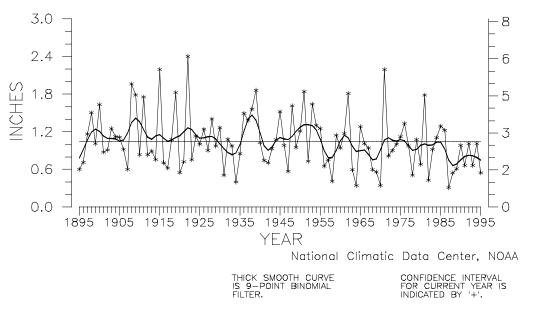


Figure 11



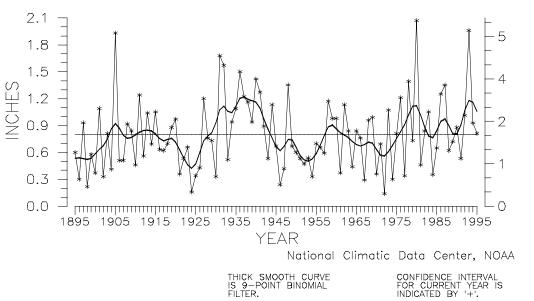
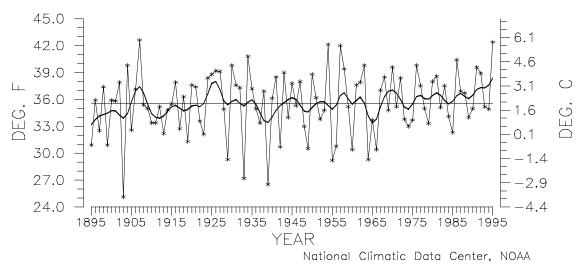


Figure 12

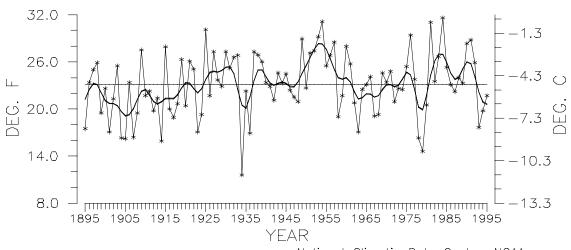
SOUTHWEST REGION TEMPERATURE FEBRUARY, 1895-1995



THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

Figure 13

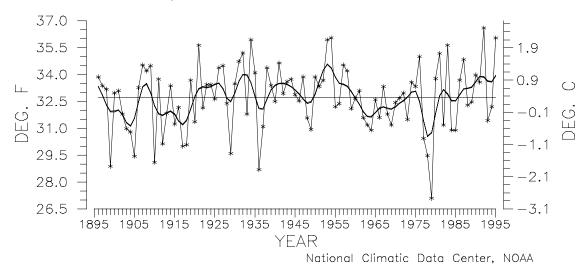
NORTHEAST REGION TEMPERATURE FEBRUARY, 1895-1995



National Climatic Data Center, NOAA

Figure 14

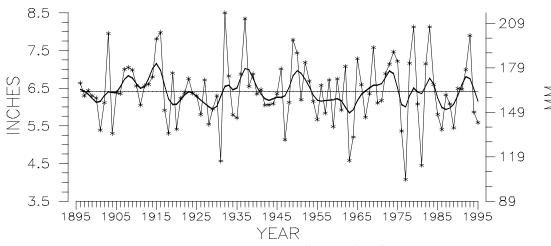




THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

Figure 15

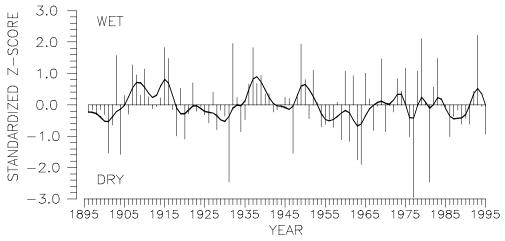




National Climatic Data Center, NOAA

Figure 16

U.S. NATIONAL NORMALIZED PRECIPITATION INDEX DEC-FEB, 1895-96 to 1994-95



National Climatic Data Center, NOAA

THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

Figure 17

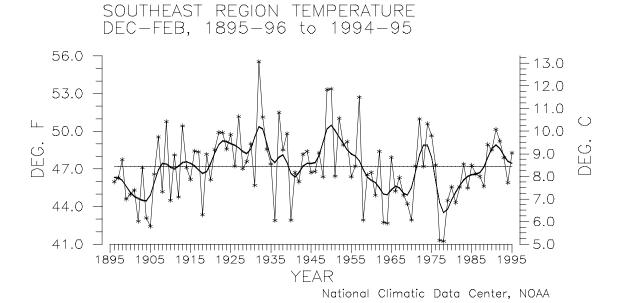
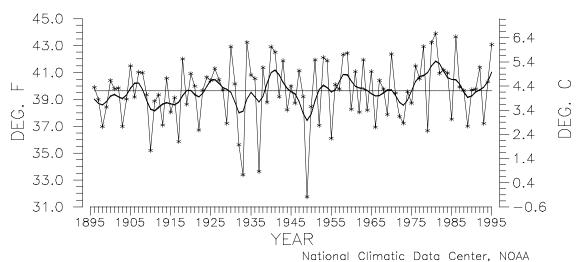


Figure 18





THICK SMOOTH CURVE IS 9-POINT BINOMIAL FILTER.

Figure 19

WEST NORTH CENTRAL REGION PRECIPITATION DEC-FEB, 1895-96 to 1994-95

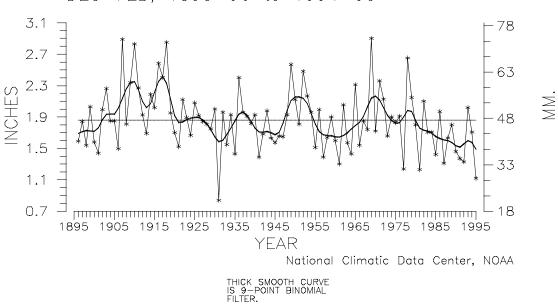


Figure 20

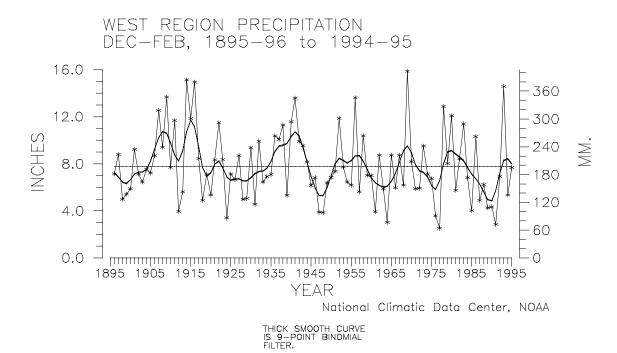
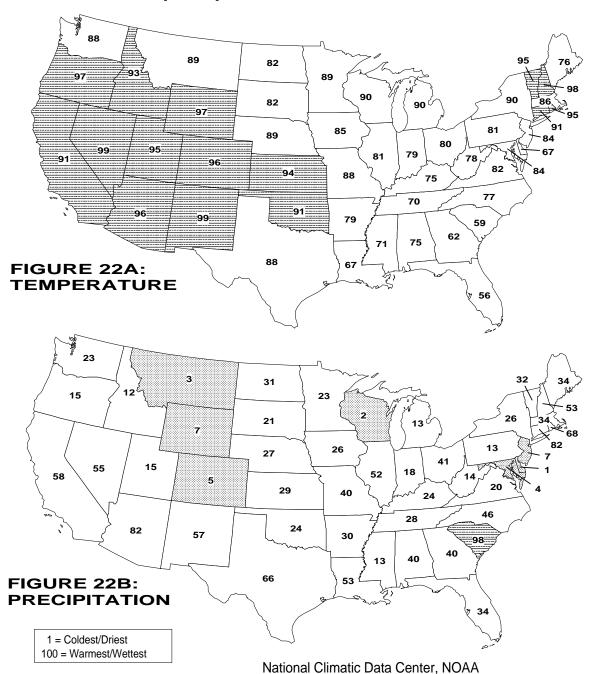


Figure 21

WINTER (DJF) 1994-95 STATEWIDE RANKS



Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1995. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 91-100) are shaded.